Appl. No. 09/964,441 Attorney Docket No. 3777-0102P Amendment filed December 13, 2002

## **VERSION WITH MARKINGS TO SHOW CHANGES MADE**

## IN THE CLAIMS:

Please cancel claims 2-5, 10, 13, 14 and 18-20 without prejudice or disclaimer of the subject matter contained therein.

- 1. (Twice Amended) An ultrasonic cleaning apparatus which cleans a subject to be cleaned by utilizing oscillation generated by an ultrasonic oscillator, comprising:
- a power amplifier for amplifying an amplitude of a signal to supply the signal as power to said ultrasonic oscillator;
  - a detector for detecting a state of said ultrasonic oscillator; and
- a controller for controlling a frequency of said signal depending on an output detected by the detector,
- a switching transistor connected between said power amplifier and said ultrasonic oscillator,

a switch control section connected to said switching transistor,

wherein said switch control section turns off said switching transistor until said phase difference becomes equal to a predetermined value, and turns on said switching transistor after said phase difference becomes equal to said predetermined value, and

wherein said power supplied to said ultrasonic oscillator is set to a range from 1W to 10W.

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- 8. (Twice Amended) An ultrasonic cleaning apparatus which cleans a subject to be cleaned by utilizing oscillation generated by an ultrasonic oscillator, comprising:
- a power amplifier for amplifying an amplitude of a signal to supply the signal as power to said ultrasonic oscillator;
  - a detector for detecting a state of said ultrasonic oscillator; and
- a controller for controlling a frequency of said signal depending on an output detected by the detector,

wherein said power supplied to said ultrasonic oscillator is set to a range from 1W to 10W and a difference between a resonance frequency of said ultrasonic oscillator and an anti-resonance frequency thereof is regulated to 1 kHz or more, and

wherein said ultrasonic oscillator is a Langevin type piezoelectric oscillator, and a resonance frequency thereof is set to a range from 20 kHz to 100 kHz.